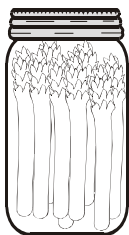


What is botulism?

Botulism is a rare, but serious illness caused by a toxin made by *Clostridium botulinum* bacteria. The toxin binds to nerves and blocks messages to muscles—causing weakness and paralysis. *C. botulinum* spores (a seed-like form of the bacteria) are commonly found in the ocean and soil, especially the soils of the west coast and Pacific Northwest. These spores allow the bacteria to survive extreme environments



Unlike most bacteria, *C. botulinum* needs an environment without oxygen to grow and produce the toxin. This environment is possible in the intestines (infant/intestinal botulism), wounds (wound botulism) and improperly canned foods* (foodborne botulism).

*Other foods have also caused foodborne botulism. These foods include garlic in oil, foil-wrapped baked potatoes, sautéed onions, and fermented fish.

Symptoms

Symptoms of foodborne botulism generally begin 12 to 36 hours after eating the contaminated food. Botulism often causes “descending paralysis”—affected people will generally notice the symptoms beginning at the top of the head and working toward the feet.

Symptoms include:

- 🔊 blurred or double vision
- 🔊 dizziness
- 🔊 dry mouth
- 🔊 difficulty swallowing or speaking
- 🔊 weakness
- 🔊 difficulty breathing
- 🔊 nausea, vomiting and cramps

Seek medical care immediately if you think you or your children have this illness. Antitoxin is the recommended treatment for foodborne botulism and must be administered as soon as possible. Even when properly treated, supportive care and a long recovery period are often required.

Foodborne Botulism and Low-Acid Foods

Most cases of foodborne botulism in Washington state have been caused by improperly canned, low-acid foods (like canned asparagus, salsa, and green beans). To prevent foodborne botulism, these foods must be acidified or canned with a pressure canner.



Low-acid foods include:
Fish, meats and poultry;
Vegetables.

pH--A measure of acidity. Values range from 0 to 14. Water is neutral and has a pH of 7. Acids have pH values below 7.

Acidity may be natural, as in most fruits, or added, as in pickled food. Lemons, pears and pickles generally have values between pH 2-4. *C. botulinum* does not grow in foods with a pH lower than 4.6.

Low-acid foods (like most vegetables and meats) generally have pH values higher than 5 and will support the growth of *C. botulinum* when canned.

Recommendations to Prevent Botulism from Home-Canned Goods

Use a pressure canner to can low-acid food items.

If your pressure canner has a dial gauge, it must be tested for accuracy before it's first use and at the beginning of the canning season (more often if it is used often or dropped). Your local cooperative extension agency can test gauges.

Follow updated home-canning procedures.

Update canning recipes every 3-5 years; contact your local Cooperative Extension Agency for current home-canning guidelines. Follow guidelines and adjust for altitude if necessary.

Select fresh, young vegetables and wash them well before processing.

Do not can over-mature, moldy or decaying food--these foods can make the canned foods less acidic and allow the *C. botulinum* spores to grow.

Do not can low-acid foods in jars larger than one quart.

No safe canning times have been developed for canning vegetables in half-gallon jars.

Follow recommended canning times and recipes for the food items you are canning.

Make sure you follow the guidelines for the type of pack and size of jar you are using.

Keep the pressure steady in your pressure canner for the entire processing time.

If pressure drops below the required level, turn up the heat and bring the canner up to the target pressure level. Reset your timer for the full processing time.

Boil all home-canned vegetables in a rolling boil for 10 minutes.

(Add 1 minute for each additional 1000 feet in altitude.) Although the *C. botulinum* spore is heat-resistant, the toxin is destroyed by boiling. Microwave ovens should not be used to reheat home-canned foods because the safe cooking times are unknown.

Do not “taste-test” foods with off-odors or in bulging containers.

Changes in appearance, taste or odor are not always noticeable in foods containing botulin, but food or cans that look or smell “wrong” are possibly not safe and are not worth the risk.

Throw away:

- Home or commercially-canned goods that are bulging, or have broken seals, rust or leakage.
- Canned goods with signs of spoilage: mold; small bubbles, spurting liquid or unusual pressure when the jar is opened; cloudy or yeasty liquid; unpleasant odor; and mushy, slimy food.
- Non-acidified vegetables and other low-acid foods canned using the boiling “water bath” method.

What is infant botulism?

Infant botulism (also called intestinal botulism) is a serious, but usually non-fatal disease. Like foodborne botulism, intestinal botulism is the weakening of muscles caused by a toxin. Unlike foodborne botulism, the toxin is actually formed *inside* the body.

Clostridium botulinum spores are widespread in the environment and are commonly swallowed by both adults and children. The spores don't germinate in mature intestinal tracts, but can begin to grow in the large intestine of vulnerable people (most commonly babies, but adults after intestinal surgery have *rarely* been affected).

There is no way to prevent the disease, but for infants you can prevent one possible source of the spores—honey. (The spores have been found in about 10 percent of sampled honey.)



Recommendation:
Do not give honey to
babies under
1 year of age.

(Honey is safe for older children and adults.)

Symptoms of Infant Botulism

The first sign that a baby has infant botulism is usually constipation. Later symptoms include a feeble cry, lethargy and poor feeding. Please see your pediatrician for more information.

Two more tips to reduce foodborne botulism:

Refrigerate garlic products that are bottled in oil.

When pickling vegetables, use equal amounts of water and 5% vinegar in the brine.

Frequently Asked Questions

How common is botulism?

According to the CDC, an average of 110 cases of botulism are reported each year in the U.S. About 25% of these cases are foodborne, 72% are infant, and the rest are wound botulism. Since 1950, California, Washington, Colorado, Oregon, and Alaska have accounted for more than half of all reported foodborne outbreaks of botulism.

Who is at risk?

Everyone is susceptible to foodborne botulism. Intestinal (infant) botulism usually occurs in infants, but can also occur in adults. Injection drug users are at increased risk for wound botulism.

What are “Botox” injections?

Purified botulism toxin is the first bacterial toxin to be licensed by the FDA to be used as medicine. It was licensed in 1989 to treat eye spasms (abnormal, involuntary and continuous contractions of muscle) and is undergoing tests to treat other disorders. During treatment, small doses of the toxin are injected into the affected muscle. The muscle is weakened and the spasm stops. The effect usually lasts 3-4 months and then the injections have to be repeated.

For More Information:

Benton-Franklin Health District

800 West Canal Dr.
Kennewick, WA 99336
www.bfhd.wa.gov



(509) 582-7761

WSU Cooperative Extension

5600E W. Canal Dr.
Kennewick, WA 99336

(509) 735-3551

Information can also be found on the world wide web:

National Center for Home Food Preservation

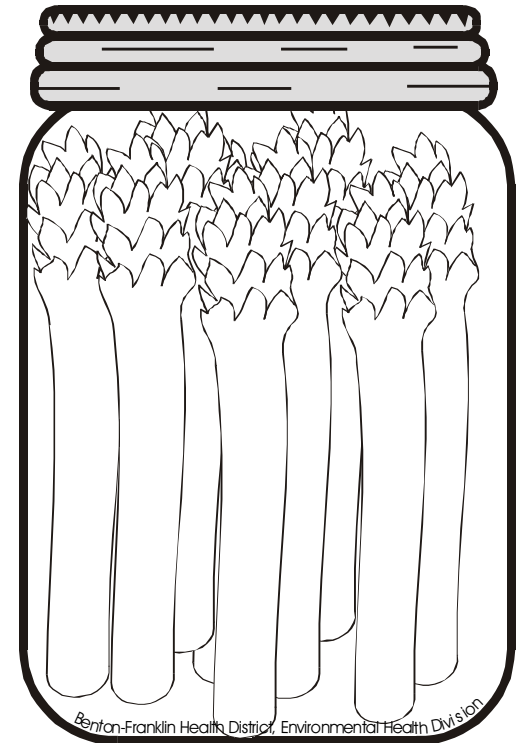
for canning: www.uga.edu/nchfp/index.html

Centers for Disease Control

for botulism information: www.cdc.gov/ncidod/dbmd/

Botulism

facts about germs series



www.bfhd.wa.gov

